--39. A method for producing a plurality of cutting tools by applying hard material coatings for enclosing each of the tools, at least one first one of the tools having a coating that fulfills a requirement of high adhesive strength of the coating to a higher degree than a requirement of harness of the coating, and at least one second one of the tools having a coating that fulfills a requirement of high hardness of the coating to a higher degree than a requirement of high adhesive strength of the coating, the method comprising the steps of:

for each of said tools, providing, on a first region of a tool body that contains at least one first cutting edge, a first hard material coating by means of a plasma vacuum coating process;

providing on a second region of said tool body that is adjacent said first region, a second hard material coating by means of said plasma vacuum coating process;

selecting as hard material for said first and second hard material coatings, a material selected from the group consisting of: carbide, oxide, oxicarbide, nitride, nitrocarbide, oxinitride and nitrooxicarbide, of at least two of the metal elements Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W and Al; and

for said at least one first one of said tools, selecting said first hard material coating to have a content of the at least two of said metal elements which is at most 2at% different from a content of said at least two metal elements in said second hard material coating for said first one of said tools which fulfills

the requirement of high adhesive strength of the first hard material coating to a higher degree than a requirement of hardness of said first hard material coating; and

for said at least one second one of said tools, selecting said first hard material coating to have a content of said at least two metal elements to be different from the content of said at least two metal elements of said second hard material coating by more than 2at% for said second one of said tools which fulfills the requirement of high hardness of said first hard material coating to a higher degree than a requirement of high adhesive strength of said first hard material coating.

40. The method of claim 39, further comprising the step of depositing at least as a part of said hard material coatings a (Ti,Al)N coating on said tool body.

41. The method of claim 40, further comprising the step of providing an intermediate layer between said tool body and said hard material coatings.

42. The method of claim 39, further comprising the step of depositing said hard material coatings by means of arc evaporation.

43. The method of claim 39, further comprising the step of realizing said first hard material coating to have a content of said at least two metal elements that is different from said content of said metal elements in said second hard material coating by at most 2at% by establishing a ratio of a bias voltage applied to said tool body during said coating process with respect to an electric reference potential for a plasma discharge of said plasma vacuum coating process with respect to partial pressure of a reactive gas in a process atmosphere of said plasma vacuum coating process to be:

$$1 \times 10^3 \leq U_{bias} / P_{reactive} \leq 4 \times 10^3$$

wherein voltage unit is volt and pressure unit is mbar, and wherein $U_{bias}$ stands for said bias voltage and $P_{reactive}$ stands for said partial pressure.

44. The method of claim 43, including selecting ground potential as said electric reference potential.

45. The method of claim 39, including selecting said first hard material coating to have a content of said at least two metal elements at most 2at% different from said content of said metal elements in said second hard material coating for tool bodies of drills, roughing milling cutters, peripheral milling cutters, tools for hobbing machines or turning tools.

46. The method of claim 39, further comprising the step of applying said first hard material coating to have a content of said at least two metal elements to be different from said content of said at least two metal elements of said second hard material coating by more than 2at% for tool bodies of front-end milling cutters or of ball-end milling cutters.

47. The method of claim 39, further comprising the step of applying said first hard material coating with a content of said at least two metal elements to be different by at most 2at% with respect to said content of said at least two metal elements of said second hard material coating for tool bodies of tools for cutting with a larger cross-sectional area of the cut at a lower cutting rate and applying said first hard material coating with a content of said at least two metal elements to be different by more than 2at% with respect to the content of said at least two metal elements in said second hard material coating for tool bodies for tools for cutting with smaller cross-sectional area of the cut at a larger cutting rate.

48. The method of claim 39, further comprising the step of applying said first hard material coating to have a content of said at least two metal elements to be different from said content of said at least two metal elements in said second hard material

coating by at most 2at% for tool bodies of tools for cutting workpiece material having a hardness of up to at most 45 Rockwell and a tensile strength of up to at most 1500 $Nmm^{-2}$.

49. The method of claim 48, wherein said tool bodies are tool bodies of tools for working quenched steels, highly alloyed steels, stainless steels or non-ferrous metals.

50. The method of claim 39, further comprising the step of applying said first hard material coating to have a content of said at least two metal elements to be different from said content of said at least two metal elements in said second hard material coating by at most 2at% for tool bodies for tools, the cutting edge thereof being loaded simultaneously with different cutting speeds relative to a worked workpiece.

51. The method of claim 50, wherein the tool to be produced is a drill where minimum cutting speed occurs at a tip of the drill and significantly higher cutting speed occurs at a circumference of the drill.

52. The method of claim 39, further comprising the step of applying said first hard material coating to have a content of said at least two metal elements to be different from said content of said at least two metal elements in said second hard material

coating by more than 2at% for tool bodies of tools for cutting workpiece materials having a hardness of more than 45 Rockwell and a tensile strength of more than 1500 $Nmm^{-2}$.

53. The method of claim 52, wherein the tool body is a tool body for a tool for hard chipping.

54. The method of claim 39, wherein said first and second hard material coatings comprise at least one (Ti,Al)N layer.

55. The method of claim 39, thereby selecting said first hard material coating to have a content of said at least two metal element which is at most 1at% different from the content of said at least two metal elements in said second hard material coating, if said tool being produced must fulfill the requirement of high adhesive strength of the first hard material coating to a higher degree than the requirement of hardness of said first hard material coating.

56. The method of claim 55, wherein a content of Al in the material composition of said first hard material coating varies by less than 1at% with respect to the content of said Al in said second hard material coating, if the tool being produced must fulfill the requirement of high adhesive strength of the first hard material coating to a higher degree than the requirement of hardness of said first hard material coating, and further selecting

the content of aluminum in the material composition of said first hard material coating to be from the content of said Al of said second hard material coating by more than 2at%, if said tool being produced must fulfill the requirement of high hardness of said first hard material coating to a higher degree than the requirement of high adhesive strength of said first hard material coating on said base body.--